



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/667,186	09/21/2000	Robert K. Jenner	1009-0100	8355

25263 7590 08/28/2003

J GRANT HOUSTON  
AXSUN TECHNOLOGIES INC  
1 FORTUNE DRIVE  
BILLERICA, MA 01821

EXAMINER

JIMENEZ, MARC QUEMUEL

ART UNIT

PAPER NUMBER

3726

DATE MAILED: 08/28/2003

15

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/667,186

Applicant(s)

JENNER ET AL.

Examiner

Marc Jimenez

Art Unit

3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 11 August 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6-19 and 22-26 is/are rejected.
- 7) ☒ Claim(s) 3,5,20, and 21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 14.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/11/03 has been entered.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1, 2, 4, 9-12, 16-18, and 24** are rejected under 35 U.S.C. 102(e) as being anticipated by Bone (6,273,483).

Bone teaches a component manipulation system, comprising: first **10a** and second **10b** opposed jaws for cooperatively engaging a component **14**, a first x-axis detection system (col. 6, lines 44-50, each of the fingers are controlled by actuators **60** which provide movement in the x,y,z axes, each of the actuators **60** which control movement in the x,y,z directions are

Art Unit: 3726

controlled by the programmable gripper. Therefore, each of the actuators **60** have a detection system to control the respective positions along the x,y,z axes) for detecting an x-axis position of the first jaw **10a**, a first y-axis detection system (col. 6, lines 44-50) for detecting a y-axis position of the first jaw **10a**, a second x-axis position detection system for detecting an x-axis position of the second jaw **10b**, a second y-axis position detection system for detecting a y-axis position of the second jaw **10b**, a first x-axis actuator (see fig. 6 where there are shown actuators **60** allowing movement for each finger in the x,y,z axes, see also col. 7, lines 18-23) for positioning the first jaw **10a** along the x-axis, a first y-axis actuator (see fig. 6 where there are shown actuators **60** allowing movement for each finger in the x,y,z axes, see also col. 7, lines 18-23) for positioning the first jaw along the y-axis, a second x-axis actuator (see fig. 6 where there are shown actuators **60** allowing movement for each finger in the x,y,z axes, see also col. 7, lines 18-23) for positioning the second jaw **10b** along the x-axis, and a second y-axis actuator (see fig. 6 where there are shown actuators **60** allowing movement for each finger in the x,y,z axes, see also col. 7, lines 18-23) for positioning the second jaw **10b** along the y-axis, wherein a combination of the first x-axis position detection system, the first y-axis position detection system, the first x-axis actuator, the first y-axis actuator for the first jaw **10a** and the second x-axis position detection system, the second y-axis position detection system, the second x-axis actuator, and the second y-axis actuator for the second jaw enable the first jaw and the second jaw to be independently positioned in both the x-axis and y-axis directions simultaneously (col. 5, lines 53-54).

Regarding the limitations that the system is adapted to engage an optical component (as recited in claims 1 and 2), a recitation of the intended use of the claimed invention must result in

Art Unit: 3726

a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Regarding claim 4, note the stages in fig. 6.

Regarding claims 9, 10, 17, and 18, Bone teaches a control system to drive the actuators in response to the position detection system (col. 6, lines 45-46).

Regarding claims 11 and 24, the jaws extend downward (fig. 4).

Regarding claim 12, note the stages (above numeral 60 representing the actuator for the z-axis).

Regarding claim 16, the assembly above each of the jaws **14a and 14b** are considered “actuators”. The “actuators” have x and y axis movement controllers 60.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 6, 8, and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bone in view of Althaus et al. (5,255,333).

Art Unit: 3726

Bone teaches the invention cited with the exception of having a jaw heater for heating at least one of the first and second jaws.

Althaus et al. teach a jaw heater (col. 3, lines 51-64) for heating at least one of first and second jaws **13**.

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Bone with a jaw heater, in light of the teachings of Althaus et al., in order to provide means to heat a solder that is used to attach a component to a substrate (as suggested by Althaus et al. at col. 3, lines 51-64).

6. **Claims 7 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bone in view of Althaus et al. as applied to claims 6 and 22 above, and further in view of Kalina (4,214,353).

Bone/Althaus et al. teach the invention cited with the exception of the heating done by laser. Instead, Althaus et al. teach heating the jaws by induction (col. 3, lines 51-64 of Althaus et al.).

Kalina teaches heating by a laser (col. 3, lines 21-24). Furthermore, Kalina teaches that laser heating is an equivalent heating means as induction heating. Therefore, because laser and induction heating are art recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute induction heating for laser heating.

Art Unit: 3726

7. **Claims 13, 14, 25, and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bone.

Bone teach the invention cited with the exception of using voice coil systems for the actuator or optical encoder and grading for the detection system.

The particular type of actuator or detection system used is deemed to be an obvious matter of design choice because the use of a voice coil system for an actuator or an optical encoder and grading for a detection system would work equally as well with the actuators and detection system of Bone. There is no evidence of unexpected results achieved or benefits attained by using the claimed actuators and detection system versus the actuators and detection system taught by Bone. Furthermore, official notice is taken that it is well known in the art to have used voice coil actuators and optical encoder and grading for a detection system in order to provide accurate and reliable positioning and position detection.

8. **Claims 15 and 19** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bone in view of Novak et al. (5,996,437).

Bone teaches the invention cited with the exception of having a substrate stage.

Novak et al. teach a substrate stage (fig. 1a).

It would have been obvious to one of ordinary skill in the art, at the time of the invention, to have provided the invention of Bone with a substrate stage, in light of the teachings of Novak et al., in order to position a workpiece relative to the jaws.

***Allowable Subject Matter***

9. **Claims 3, 5, 20, and 21** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. The following is a statement of reasons for the indication of allowable subject matter: claims 3, 5, 20, and 21 recite air bearings between the jaw and system frame in combination with all of the other claim limitations which is not shown in Bone. Furthermore, there appears to be no teaching or suggestion for including air bearings in the Bone reference.

***Response to Arguments***

11. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

***Contact Information***

12. Telephone inquiries regarding the status of applications or other general questions, by persons entitled to the information, should be directed to the group clerical personnel. In as much as the official records and applications are located in the clerical section of the examining groups, the clerical personnel can readily provide status information. M.P.E.P. 203.08. The Group clerical receptionist number is (703) 308-1148.

If in receiving this Office Action it is apparent to applicant that certain documents are missing, e.g., copies of references cited, form PTO-1449, form PTO-892, etc., requests for copies



Art Unit: 3726

of such papers or other general questions should be directed to Tech Center 3700 Customer Service at (703) 306-5648, or fax (703) 872-9301 or by email to [CustomerService3700@uspto.gov](mailto:CustomerService3700@uspto.gov).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marc Jimenez whose telephone number is **703-306-5965**. The examiner can normally be reached on **Monday-Friday, between 5:30 am- 2:00 pm**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Vidovich can be reached on 703-308-1513. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.

Other helpful telephone numbers are listed for applicant's benefit.

Allowed Files & Publication	(703) 308-6789 or (888) 786-0101
Assignment Branch	(703) 308-9723
Certificates of Correction	(703) 305-8309
Drawing Corrections/Draftsman	(703) 305-8404/8335
Petitions/Special Programs	(703) 305-9285
Terminal Disclaimers	(703) 305-8408
PCT Help Desk	(703) 305-3257

If the information desired is not provided above, or a number has been changed, please call the general information help line below.

Information Help line	1-800-786-9199
Internet PTO-Home Page	<a href="http://www.uspto.gov/">http://www.uspto.gov/</a>



Marc Jimenez  
Patent Examiner  
AU 3726

**MJ**

August 22, 2003